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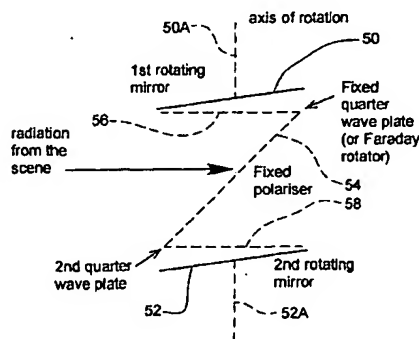
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(54) Title: **SCANNING APPARATUS**



(57) Abstract: A scanning apparatus operable in the microwave, mm-wave, sub mm-wave (TeraHerz) and infrared ranges comprises a primary drum (10) mounted for rotation about a central axis A of the primary drum being hollow and of rectangular polygonal form to provide a number of sides or facets (12, 14) each adapted to transmit such radiation, from a field of view, which is plane polarised in a first direction at 45° with respect to the rotary axis of the drum and to reflect radiation which is plane polarised in an orthogonal direction. Thus, radiation passing into the drum through whichever said side of the drum is currently facing the field of view and passing towards the diametrically opposite side will be plane polarised with a polarisation direction such as to be reflected back by that diametrically opposite side towards the rotary axis of the drum. Each polygon side of the drum is configured so as to act, when reflecting radiation striking that side from within the drum, as a concave mirror, to focus the radiation towards a receiver assembly which includes a radiation detector for such radiation. In another embodiment scanning apparatus operable in the microwave, sub mm-wave, mm-wave and infrared ranges may comprise a reflective disc or mirror (50', 52') mounted for rotation relative in a support (74, 76) is itself mounted for rotation with respect to a second support (86) about a second axis inclined with respect to the first axis.

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